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A NEW METHOD OF COMBATING FUNGUS ON FISHES
IN CAPTIVITY

By Paul Zirzow

Paper presented before the Fourth International Fishery Congress
held at Washington, U. S. A., September 22 to 26, 1908

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A NEW METHOD OF COMBATING FUNGUS ON FISHES IN CAPTIVITY.

By PAUL, ZIRZOW.

[Translated from the German.]

Several methods have already been proposed and used for combating parasites attacking fishes and for the treatment of diseased fishes. These methods consist in the application of baths of dilute watery solutions of substances which act as death-dealing agents on the micro-organisms. Greatly diluted solutions of salicyl and ammonia have been used for such baths. The use of ammonia (1:1000) for this purpose, proposed by Doctor Roth, of Zürich, proved more effective than salicyl, according to experiments made at the biological station of Munich, as this agent entirely kills off parasitic worms.

The treatment of fishes with baths of this kind has, however, the disadvantage that the fishes themselves suffer from the effects, so that the treatment can be given only with the greatest precaution and during a short period. In order to obtain a complete recovery, repeated baths have been recommended. The treatment of fishes, especially those attacked by fungus diseases, is necessarily very tedious, since the destruction of fungus growth can not be attained so quickly as the extermination of parasitic worms.

This disadvantage in the length of time required for effectual treatment with baths, as well as the injurious effect upon the diseased fish, may be overcome by a method which has been used hitherto only in the transportation of live fish. The feasibility of this method has been shown by the results of several experiments.

The new method of combating fungus diseases consists in keeping the diseased fishes in water regenerated by ozone until the disease has disappeared. The adequacy of such treatment was demonstrated by an experiment which took place in Galatz in October, 1906, during test of a method of keeping fish alive by means of water regenerated with ozone.

This experiment, in which tench, carp, and shad were used, showed that injured fishes which had fungus filaments and growths on their wounds when

they were placed in the experiment tanks of a special car and treated with ozone were gradually recovering as the experiment progressed, and that at the end of the 118 hours of the experiment the fungus growths had disappeared.

The tench that had been used in the experiment were placed in the Danube in a floating inclosure and after some four weeks were again, with some carp, loaded into the special car to be carried back to Berlin. Some of the tench again showed signs of fungus. The total quantity of fish used for this experiment was 725 kilograms of tench, 1,500 kilograms of carp, and a few kilograms of pike. The saturation of the water was about 50 per cent, there being 4,500 kilograms of water. The car reached Berlin after a journey of about seventy hours, and it was found that on this occasion likewise, in spite of the abnormally high saturation of the water, the growth had again disappeared on the fishes and the wounds were healing. The fishes were in good condition, and were kept in receptacles a long time after being unloaded.

Experience gleaned during these experiments indicates that in the use of ozone for the regeneration of water it is possible to combat the invasion of fungus growth and to cure the fishes attacked by this disease.

The method may be applied by keeping the water in which the diseased fishes have to be held during their disease in constant rotation and by saturating it during its motion with ozone generated by dark electric discharges.

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